

Hydro-Acoustic Monitoring for Nuclear Explosions

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Abstract

Part of the program being designed to monitor the world for violations of the Comprehensive Test Ban Treaty (CTBT) includes the use of a global network of hydrophones. This network would be primarily used to monitor for ocean born nuclear explosions, but could also be used as a secondary tool to monitor for continental violations. One of the requirements to reliably detect and locate treaty violations, as well as determine network performance, will be the capability to model acoustic propagation accurately over distances in excess of 10000 kilometers. The principle of reciprocity and global-scale acoustic propagation models are used to investigate the performance characteristics of proposed hydro-acoustic networks. We describe the models used and demonstrate their use on selected sites.

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